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A normative study of a proposed localization test

John Brockmeier
Pacific University

James Vale
Pacific University

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Abstract

A normative study of a proposed localization test

Degree Type

Thesis

Degree Name

Master of Science in Vision Science

Committee Chair

Subject Categories

Optometry

A NORMATIVE STUDY
OF A PROPOSED LOCALIZATION TEST

A FIFTH YEAR THESIS

PRESENTED TO THE FACULTY

OF

THE COLLEGE OF OPTOMETRY

PACIFIC UNIVERSITY

BY

JOHN BROCKMEIER

JAMES VALE

IN PARTIAL FULFILLMENT

OF THE REQUIREMENT FOR THE DEGREE

DOCTOR OF OPTOMETRY

JANUARY, 1961

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- PROBLEM -

This paper is a preliminary normative investigation of a proposed localization test designed by H.M.Haynes.

The term "localization" in this paper pertains to the quantitative determination of a subjects skill in correctly reporting the number and spatial position of a group of objects displayed tachistoscopically on a back projection screen.

Name_____ Age_____ M____ F____

Date_____

Errors

1_____

2_____

3_____

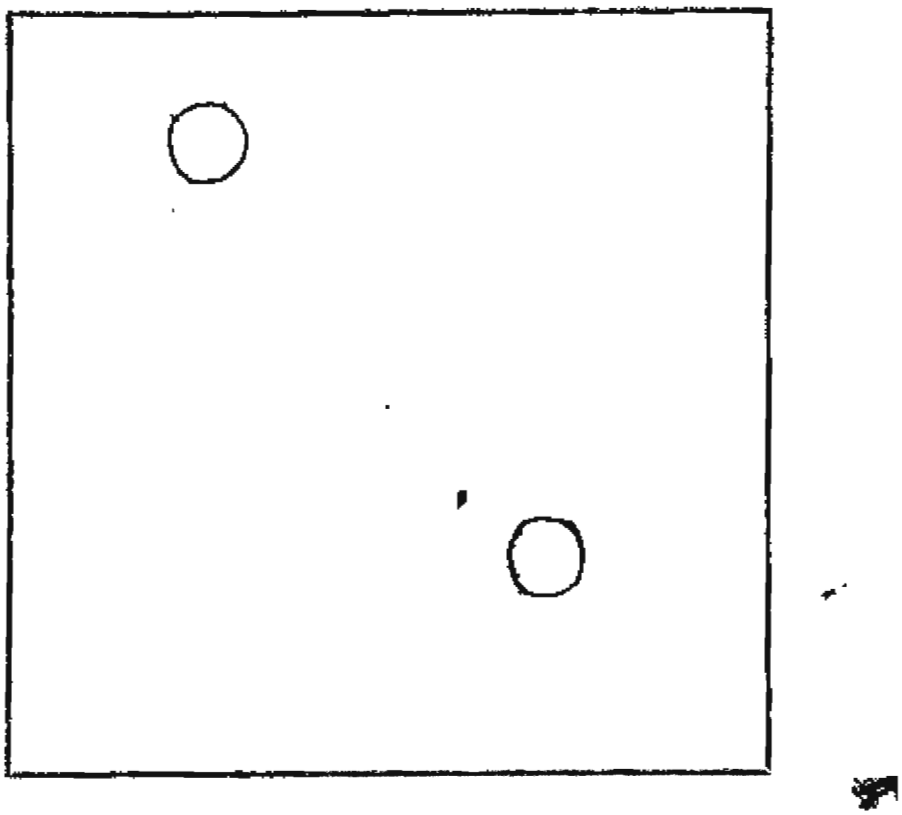
4_____

Score

N._____

L._____

No._____



Sample recording form: The circles are not part of the form, but represent the subjects view of a sample slide.

EXPERIMENTAL PROCEDURE

A. Equipment:

1. 2 x 2 slide projector
2. Shutter set at a speed of 1/25 of a second
3. Back projection screen
4. 30 2 x 2 slides for testing and one slide for instructions
5. Recording forms

The objects used on the slides were small circles. There were five slides each for groups of 1 thru 6 circles.

B. Procedure:

The back projection screen was set at a distance from the projector, so as to project a square the same size as the square on the recording form.

The patient was set at 20 inches from the screen and at eye level to it.

The experiment was run in room 25 and the illumination was set on high.

C. Instructions:

With the subject 20 inches from the screen, and at eye level, the slides were presented to him in random order. The instructions were as follows:

1. You will see flashed before you slides with from one to six circles.
2. The square in which the circles appear is identical to the square on your recording form.
3. I want you to place a small dot on your square in exactly the same place as you see the circle in the square on the screen.
4. I will say ready, now, and then you will see the flash.
5. Are there any questions?

D. Method of scoring:

The subjects were given one point for each slide in which they copied the right number of circles, and one point for each dot localized.

To score the tests, the recording forms were superimposed on the projected image of the slides on the screen. The subject's dot had to be inside of the circle or else touching in order to score.

With one point per slide for correct number of dots, and one point per dot correctly localized. There were 135 possible points to the test.

The subjects were scored in the following catagories:

A. Correct number of dots per slide

B. Correct number of localizations per slide

C. Correct number of dots per group

D. Correct number of localizations per group

E. Correct number of dots and localizations per group

F. Total number of dots and localizations for the entire series.

RESULTS

The fifty subjects tested showed the following statistics:*

	MEAN	MEDIAN	MODE	SIGMA
A. Total test	37.9	36.54	33	6.95
B. Group of ones	63	67.7	64.6	12.87
C. Group of twos	50.4	49	44.5	11.91
D. Group of threes	41	40.75	34.5	10
E. Group of fours	30.2	39.9	44.5	9.18
F. Group of fives	33.8	34	34.5	9.65
G. Group of sixes	28.	25.3	24.5	7.91

* The scores in this table are percents of total possible, not raw scores.

The number of correct responses reduced with the increase in the number of objects.

A split correlation was done to estimate the reliability of the test. This was done by omitting the symetrical slide from each group, which were numbers 15, 17, 20, 22, 26, and 27 of the series. (This series is available from the V.T. Lab.) Then the raw scores from the first two remaining slides in each group was correlated against the raw score of the last two slides. The correlation was .49.*

* Raw score denotes points scored before conversion into percent.

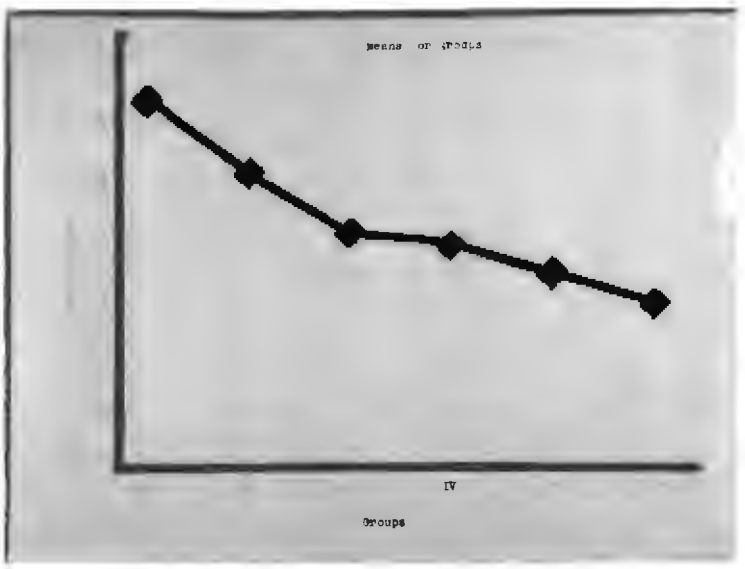
CLINICAL OBSERVATIONS

The subjects could be classed into three categories.

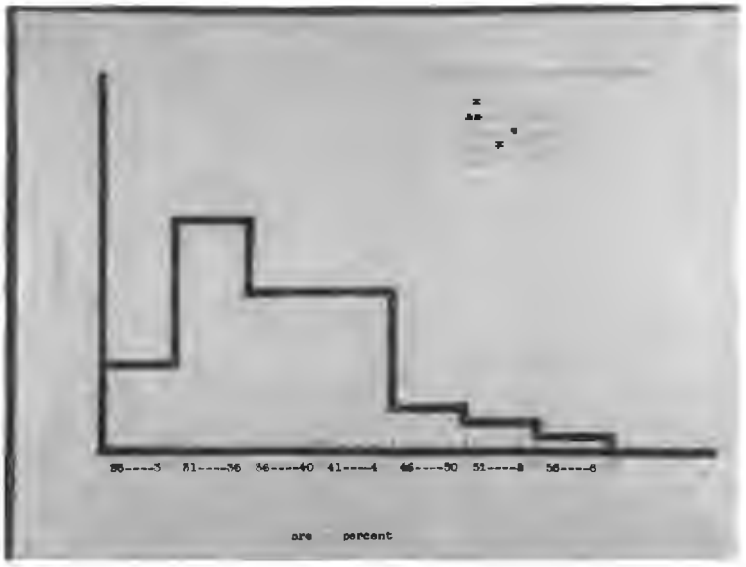
The first category was the subjects who appeared confident throughout the entire test. These people were very tense and appeared keyed up. This category of subjects seemed to reflect the air of competition while taking the test.

The second category of subjects appeared confident until a slide with five or six dots was flashed. This group would then appear to give up and would not put out their best effort for the rest of the test.

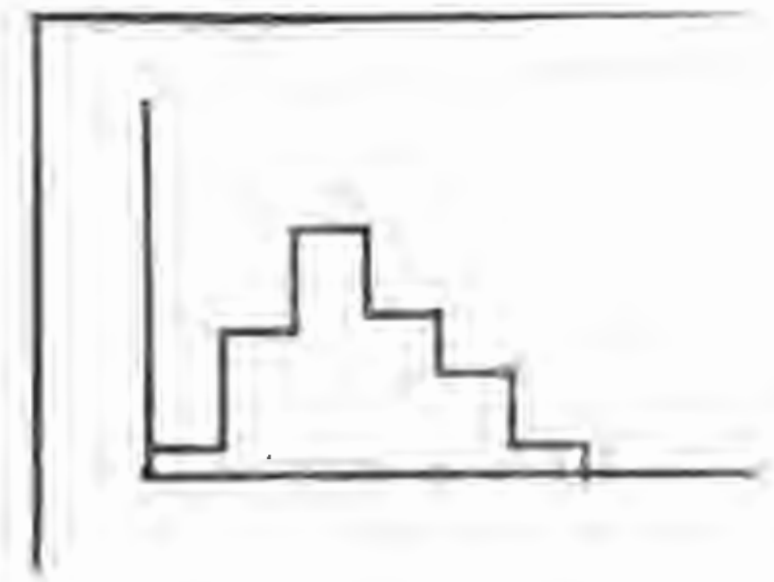
The third group seemed to be awed by the whole test right from the first. This group reflected the attitude that the test was impossible to score on, at least for them, and therefore they appeared not to be trying very hard through the entire test series.



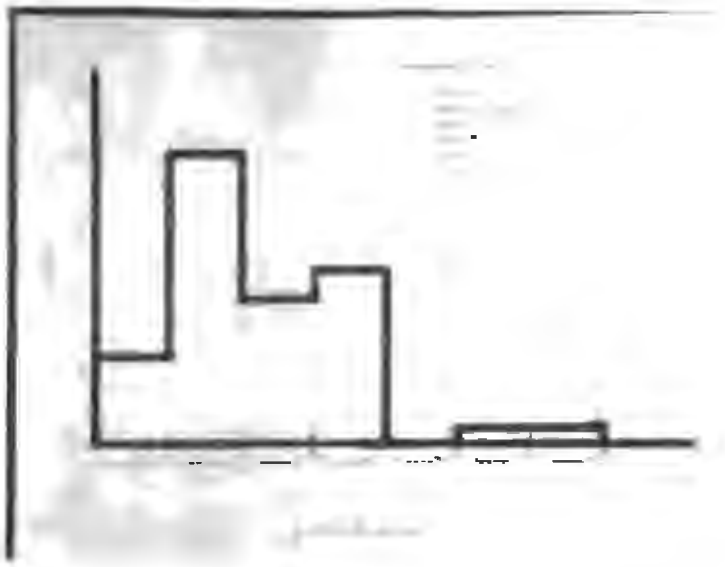
Graph #I---showing the mean score for each group in per cent



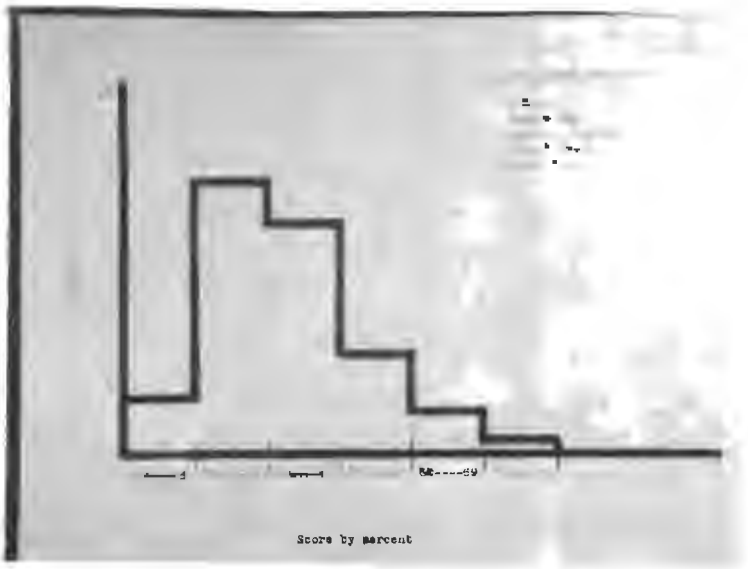
Graph #2---Histogram showing frequency distribution for total score in per cent.



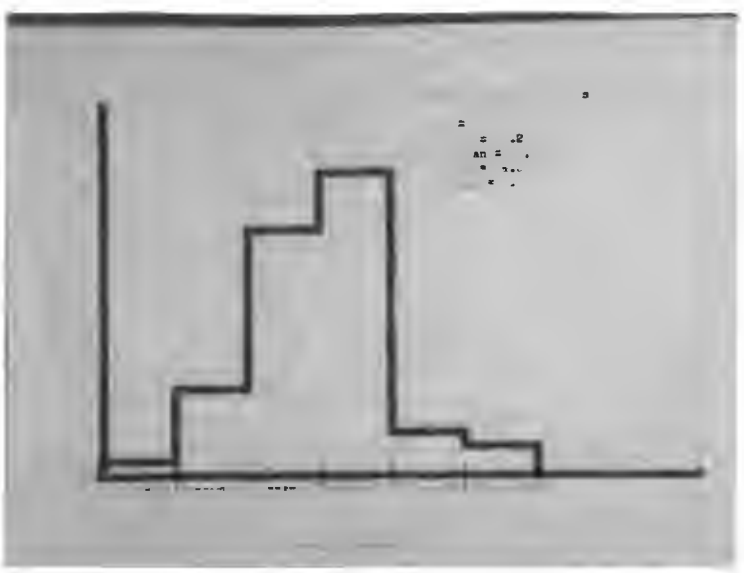
Graph #3---Histogram showing the frequency distribution for the group of ones in per cent.



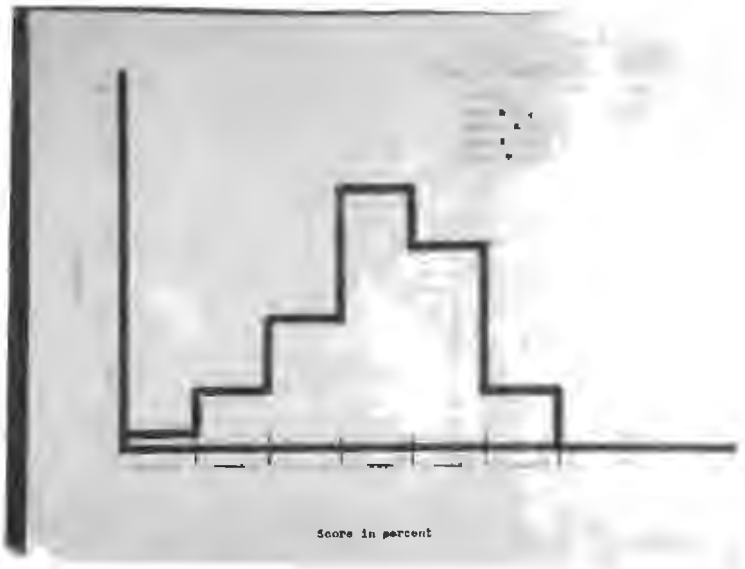
Graph #4---Frequency distribution for group of twos in per cent.



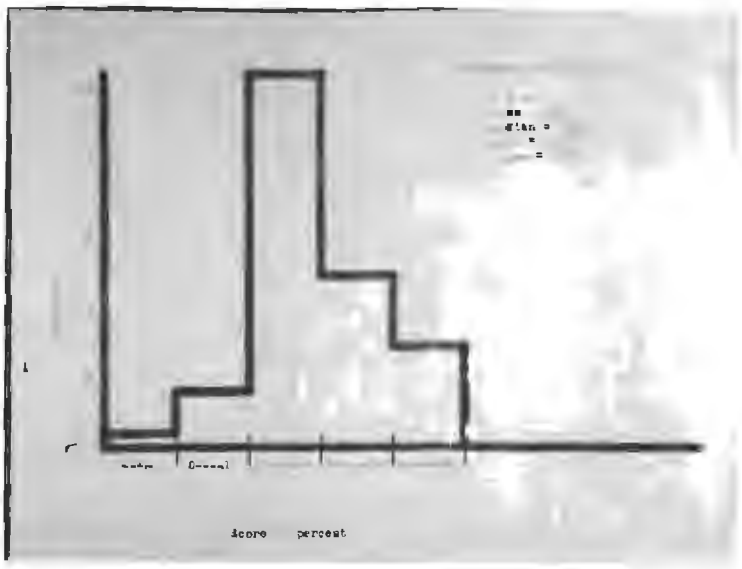
Graph #5---Frequency distribution graph for group of threes in per cent.



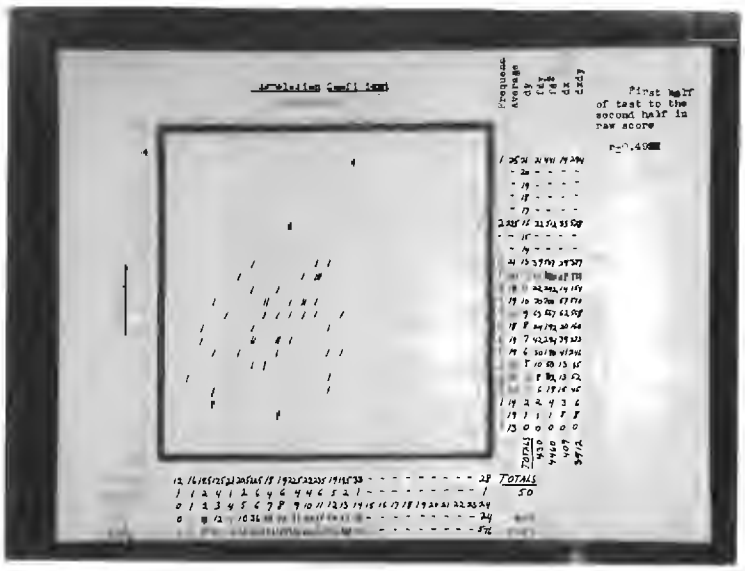
Graph #6---Frequency distribution histogram for group of fours in per cent.



Graph #7---Graph showing frequency distribution for group of fives in per cent.



Graph #8---Frequency distribution for group of sixes in per cent.



Graph # 9---Correlation of the first half of the test to the second half of the test using the raw score for the coordinates.

-Summary-

This paper represents a statistical and graphical analysis on fifty subjects in an exploratory normative study of a new localization test.

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SUBJECT A
CASE ANALYSIS